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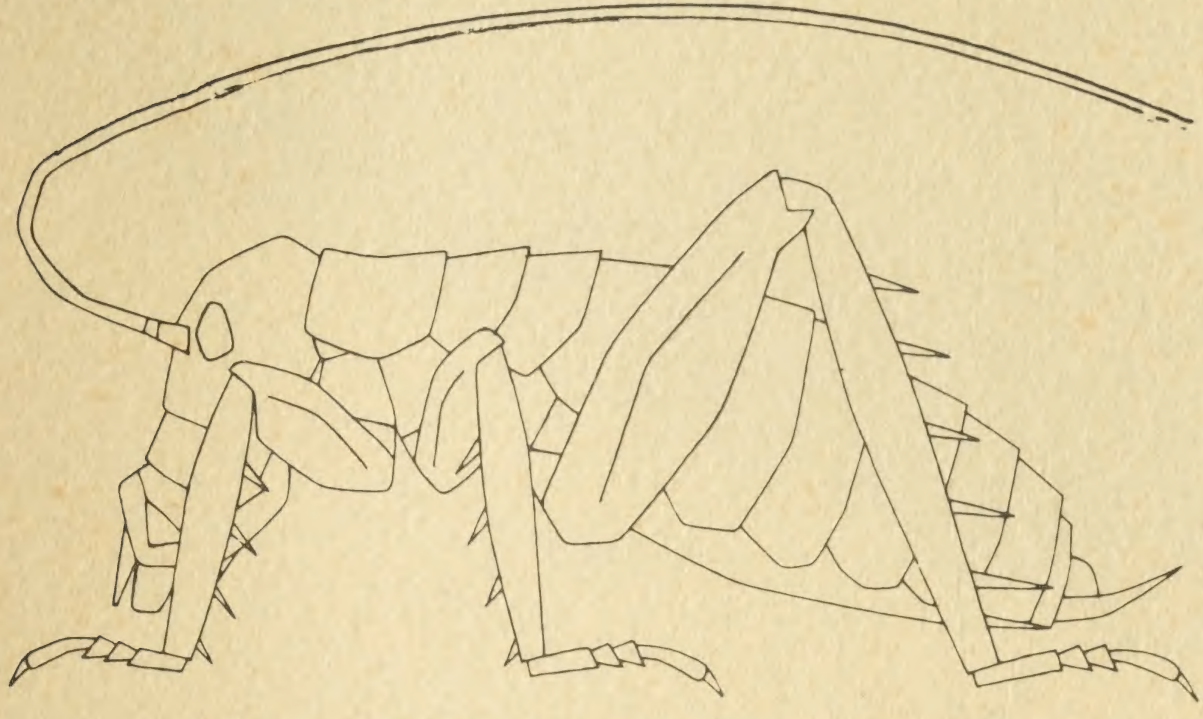

Newsbulletin of The Entomological Society of New Zealand Inc.

CONSTITUTION ISSUE

VOL. 7 **NO.** 4 1984

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ISSN 0111-7696

HE COLLECTS CORYMBITES.

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The Inaugural award of the Ian MacKerras Medal for Excellence in Entomology was made at the Australian Society Annual Dinner at Mildura this year. The recipient was Tony (J.A.L.) Watson of the CSIRO Division of Entomology at Canberra.

The major contributions that Tony Watson has made to World Entomology include over a hundred papers and books on topics that include physiology and endocrinology, taxonomy, development and caste function in termites, taxonomy and biology of dragonflies and other areas such as insect zoogeography.

Perhaps this society is now mature enough to consider a medal "For Excellence in Entomology" After all, we are considering the admittance of Fellows into the Society. We have a number of great Entomologists in our history - should we remember one of them - perhaps a past member of the Society - with a suitably designed medal which could be awarded from time to time at the Annual Dinner - for "Services or Excellence in NZ Entomology".

Comments from readers would be welcomed.

THE ENTOMOLOGICAL SOCIETY OF NEW ZEALAND

Annual Dinner Address
Dunedin Conference

ANDY BARRATT

Who once attended a Wedding Reception at Silwood Park!

For the benefit of those of you who may have been thinking that my name had been included at the bottom of the menu due to some computer aberration, I had better begin by explaining that the details are correct, and that I *am* here by invitation. And for those who might still be wondering what a teacher of Russian is is doing addressing a conference of entomologists, I should add that this is the result of the simple accident of my being married to the conference organiser. In saying this, of course, I illustrate the first sacred law of matrimony: If in doubt, blame it on your partner.

Having accepted what has seemed to me over the last few days to be an increasingly flimsy argument that I was the ideal person for the present job, I thought that the best policy was to ensure that I had a precise job description. In reply to my enquiry - and these are the words which have been indelibly etched on my mind ever since - Barbara told me that what she envisaged was something brief, entertaining and about insects. Now I must admit that these instructions struck terror in my soul. And it shouldn't be difficult for you to imagine why. As I've mentioned, I am by occupation a teacher of language and literature. Whilst this is, beyond any dispute, a most honourable profession, and one which promotes a multitude of virtues in its practitioners, I regret to report that the ability to be brief, entertaining and to talk about insects have never in my experience been prominent amongst them.

With my instructions clearly understood, I set about the task of deciding upon a theme. At first my thoughts ranged from such topics as "Evidence of insect damage in the nature descriptions of Tolstoy" to "Dostoevsky and the ethical dilemma of pest destruction". Considerations of time, however, made me reluctantly abandon these ideas. But in the end I did hit upon a theme which I feel to be not only appropriate but also of the most crucial importance to every one of you. So important is it in fact, that I have had to ignore one of my initial instructions. (This, of course, illustrates the second sacred law of matrimony.) I stand before you, therefore, not to entertain but to instruct. My theme is the public image of insects.

Now you may not have noticed this, but it is my observation that insects stand very low in the public popularity stakes. Only snakes, rats, and the Social Credit League seem to fare much worse in fact. When I tell people that my wife works on beetles, I have noticed that this tends to evoke a response of surprise, disbelief and mild disgust, which is exceeded only by their response when I go on to inform them that I am a teacher of Russian.

The simple fact of the matter is that, for most people, contact with the insect world means the infliction of death on as many of their number as possible. I myself, before I was born again through marriage to an entomologist, was blind to the beauties of the insect kingdom. I used to indulge in the most barbaric practices: Spraying insecticides indiscriminately indoors and out; squashing unsuspecting wee beasties with the heel of my boot; and despatching any spider

that had the audacity to venture up through the wastepipe into the bath back whence it came to a watery grave. But now all that has changed. Pest destruction still continues, but under the strictest control, and many insects which would previously have been murdered without a second thought are now allowed to continue their peaceful existence, absolutely safe until they venture beyond the bounds of our section.

It has to be admitted, however, that the insects have never shown much in the way of gratitude for my change of heart in any tangible way. Our vege garden seems to be as much a target for insect marauders as those of our unenlightened neighbours. Insects continue to bite me in places that cannot be scratched in polite company. And when we do any house decorating, they immediately form into suicide squads, hurling themselves into the fresh paintwork, where they instantly disintegrate, leaving wings, legs and torsos as a permanent reminder of their passing.

But I digress. The question I want to put before you is this: Why have insects got such a poor public image, and what can we do about changing it? My long search for an answer led me to my most trusted sources of information: Reader's Digest's great classic " The Wit and Wisdom of Sir Winston"; "Old Moore's Almanack"; and "The Collected Letters to the Editors of 'Penthouse'". But alas, no illumination came. Finally I turned in desperation to another classic work of reference, one which - as all crossword buffs will confirm - has unerring quality of being able to provide answers to every question except the one you are looking up. I am speaking of the "Oxford Dictionary of Quotations". Just a quick look through this fascinating volume, which purports to record the accumulated wisdom of the world's great writers, was enough to convince me that my search was at an end. For these great writers, whatever their merits, have by and large been the instigators of the most atrocious propaganda directed towards the subjugation and humiliation of insects.

Let me give you two well-known examples to begin with, both of which deal explicitly with cases of brutal violence, The first comes from "King Lear", a play praised by no less an authority than the latest edition of the New Zealand "Listener" as the greatest tragedy ever written. But just imagine the damage done to the young minds of our country when they read the lines:

> As flies to wanton boys, are we to the gods;
> They kill us for their sport.

These lines by the way, escaped the sanitising censorship of Dr Bowdler, and have as yet to elicit any protest from the SPCA.

The name Mary Howitt may be less familiar, yet she too has contributed no less memorably to this celebration of violence by penning the lines to which we have all been exposed since earliest childhood; "Will you walk into my parlour?" said a spider to a fly..." And even so seemingly innocuous a work as Lewis Carroll's "Through a Looking Glass" deals in the same sort of cruelty, providing an example which defies both logic and the trades' description act;

> He said, "I look for butterflies that sleep
> among the wheat:
> I make them into mutton pies and sell them
> on the street.

Cases of explicit violence aside, there is also an insidious undertone of anti-insect sentiment in many other works. When the

Reverend R.H. Barham wished in one of his less Christian moments to poke fun at a character in one of his poems, he described him as being:

> Like a blue-bottle fly on a rather large scale,
> With a rather large corking pin stuck through
> his tail.

Then there is John Gay's *The Beggar's Opera*, which contains a cautionary tale, which for my own safety I prefer to quote without comment:

> The fly that sips treacle is lost in the sweets.
> So he that tastes woman, woman,woman,
> He that tastes woman, ruin meets.

Thankfully, though, we can record a few exceptions to what is unfortunately the dominant trend. There is the unforgettable Uncle Toby from Laurence Sterne's *Tristram Shandy* who releases a fly from his room with the words:

> "Go poor devil, get thee gone, why should I hurt thee? This world is surely wide enough to hold both thee and me."

Even more extreme and rare is the charity displayed in a poem by a certain William Oldys:

> Busy, curious, thirsty fly
> Gently drink and drink as I;
> Freely welcome to my cup.

William Blake, on the other hand, prefers a more direct, and apocalyptic warning which I would like to take as the battle cry for the pro-insect movement:

> The caterpillar on the leaf
> Repeats to thee thy mother's grief.
> Kill not the moth or butterfly
> For the Last Judgement draweth nigh.

These are all very healthy signs. But there is a great danger in leaving the task of re-educating the public in the hands of non-specialists. I think you will see what I mean if I quote this, mu last example, which comes from a work entitled appropriately enough, *On Insects*. Its author would probably prefer to remain anonymous:

> Of all the insects no one is more wonderful than the spider,especially with respect to their sagacity and admirable way of working. I once saw a very large spider to my surprise swimming in the air. And others have assured me they often have seen spiders fly, the appearance is truly very Pretty and Pleasing.

The way forward, I think, must be clear to you by now. We must all engage in a campaign to change popular attitudes about insects both by actively promoting healthy ideas and by ruthlessly suppressing unhealthy ones. I suggest a two-fold approach to the problem. Firstly, we should set up a watchdog committee whose task it would be to bring to the attention of those in power the rights of a defenceless and unjustly maligned group. We might call this committee the Society for the Promotion of Insect Care (or SPIC for short). My second suggestion is for the formation of a writer's organisation: Writers Interested in the Good of Global Entomology - or WRIGGLE. This organisation would have the task of writing new works high in insect content and promoting the right sort of attitudes. To give an idea of what I have in mind, I'll just

mention a few works that I have begun myself just to set the ball rolling. The first is a short story called *Metamorphosis*. This is a chilling tale about a beetle which wakes up one morning to discover the hideous fact that it has been transformed overnight into a human being. Then there's a drama about an apiarist plagued by indecision which will contain a moving monologue beginning with the lines I hope will become immortal:"To bee or not to bee". I'm also working on some new versions of classic works, the aim being to bring out their latent insect content. The first three are "Antigone", "Lice-istrata" and "The thrip-penny Opera". Also planned is a novel about a most unsuccessful collector of *Curculionidae*, which has the working title "See no weevil, hear no weevil, speak no weevil". And, finally, there is the harrowing story of jealousy among the *Lepidoptera* - surely you've guessed - what else but "Moth-ello".

But this is only a tentative start. As I've said, this is a job for the experts. So, for the rest, I leave matters in your capable hands!

THE WETA 1984 7(4)90-93

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POLYNESIAN CLASSIFICATION OF SMALL LAND ANIMALS:

A DESCRIPTION FROM NIUATOPUTAPU ISLAND IN THE KINGDOM OF TONGA

Wendy Pond, 47 Makora Avenue, Waiheke Island

Niuatoputapu, Tafahi and Niuafo'ou are the Niua Islands in the north of the Kingdom of Tonga. Niuatoputapu lies midway between Savai'i in Sāmoa, 147 nm to the north, and Vava'u in Tonga, 156 nm south. 'Uvea (Wallis) lies 210 nm to the north-west, and the Lau Islands of Fiji about 317 nm in the south-west. Niuatoputapu accounts record contacts with all these groups, and the influences are reflected linguistically in names for fauna. The land crab, Cardiosoma carnifex, tupa in Sāmoa, Tonga and 'Uvea, is lailo in Niuatoputapu where Tupa is a chiefly title and the name is protected. In Fiji, lairo is a mangrove crab, Sesama gracilipes. Dragonfly is kitikitiwai in Lau; kisikisi, kisikisi vai in Tonga; kisikisi, manu kisi in Niuatoputapu; pūpū in 'Uvea; se'emū in Sāmoa. Spider web is matamatakupenga in Tongatapu; pungāleve in Niuatoputapu; apugāleveleve, apongāleveleve in Sāmoa; kaleveleve, kavelevele in 'Uvea. Niuatoputapu kaioloola and 'Uvea kaiolaola is a centipede name uniquely shared between the two.

In 1971, the anthropologist Garth Rogers established a household in Falehau village in Niuatoputapu and spent his evenings catching the bugs on the tent walls.

The DSIR had provided collecting gear; on arrival I proceeded with linguistic researches by making a collection of insects in glass vials. The charm of this method was that Falehau people recognised and named the insects, regardless of our lack of entomological knowledge. While few Niuatoputapu names are probably unrecorded, this description of Niuatoputapu classification is incomplete: some groups are missing from the collection, and often the boundaries of each Niua name have not been determined. What characteristics distinguish the larvae 'unufe and tunga? does nono, which has been defined as 'midge', include other tiny flying insects? does ikeikaavai include all aquatic larvae? what are the real fuiva?

Falehau people often expressed a clear sense of which were the "real" representatives of a name, and that they were classing other insects in that group, for example thatch-eating beetles were recognised as the real manukaipola ("manukaipola mo'oni"), while other insects were given the same name because of resemblances of body shape or movement ("kalasi pē 'o e manukaipola"); so that a name may imply both particular species and a wide grouping of insects.

Falehau people also had a clear sense of differences amongst creatures with the same name, for example in Niuatoputapu 'unufe are caterpillars and millipedes, but people observed the differences of habitat, feeding and growth stages of the different kinds of 'unufe, noting also which were native and which introduced; grouping is an expression of principles of classification and not a reflection of lack of observation.

I am presenting this classification so that New Zealand entomologists may undertake recording Maori names for insects, recognising that the one-to-one correlations made in Miller's works (1952, 1955, 1971) sometimes misrepresent Maori perception of the native fauna.

I have vivid recollections of the expeditions Garth and I made, wading through the mo'osipo (Triumfetta) and the talatala (lantana) in the fallow bush allotments, with droves of small brown grasshoppers spurting ahead of us; beating insects onto the canvas tray and then not knowing how to get them into the vials; watching the black earwigs that clustered on the rotting tips of our plantains; writing complaining letters to the DSIR that after three weeks nothing had dropped out of the litter in the "winklers" as promised, and that the butterflies did not expire as expected on the plaster of paris; of crouching in the grass to record the night chirping of the moholingo; frowning over the conflicting identifications of a spotted pumpkin beetle as lango (which the dictionaries defined as "fly") and as pepe (defined as "butterfly"); of leisurely discussions with Falehau people who came and sat on the log outside the tent and classified and named the specimens in the vials; and of writing more letters complaining that the conflicting classifications demonstrated a degenerate culture: since then, the knowledge and insight of the DSIR's Pacific Entomologist have clarified the reasons for the contradictions.

The classification presented here does not fully grasp Niuatoputapu perception of the faunal groupings because my attention was on obtaining the names of the specimens collected, and not on recording statements from Falehau people as to what characteristics they ascribe to each of the creatures and groups of creatures they distinguish, for example, "'ūngongo bore into dead wood and make a buzzing noise inside": the native burrowing bees and wasps.

The Niuatoputapu collection is held at the DSIR, Mt Albert. I have great regard for the technician who meticulously correlated identifications made by DSIR entomologists with my linguistic notes, and mounted the specimens with both scientific and Niuatoputapu names where these were recorded.

* * * *

In Niuatoputapu, ūngongo are the native solitary burrowing bees and wasps; I collected specimens of leaf-cutter bees (Megachilidae), sweat bees (Halictidae), Pison wasps (sphecidae), and Odynerus wasps (Eumenidae). The Polynesian dictionary compilers confronted an unfamiliar fauna and responded variously. Grézel's entry in his Dictionnaire Futunien, published in 1878, is:

> Ugogo "flying insect which gnaws wood or tree trunks, punctures it, and also gnaws books and paper"

Churchward's entry in his Tongan Dictionary, published in 1959, is:

> 'Ungongo "k. insect: the carpenter bee"

Pratt's entry in his Grammar and Dictionary of the Samoan Language, published first in 1862, is:

> Lago mumu "the carpenter bee" (1911)

The most recent Samoan Dictionary, published in 1966 and compiled by the linguist G B Milner, omits lago mumu, though the bees still survive. European carpenter bees (Apidae) are larger than the native Polynesian bees, but are also blackish, solitary, stout-bodied, excavate nesting chambers in dead wood, and buzz when visiting flowers.

Rabone's Vocabulary of the Tongan Language published in 1845, has:

> Bakia "a deathwatch; an insect that makes a ticking noise"

This entry was carried forward into Baker's dictionary of 1897, and in 1925 Collocott published a Supplementary Tongan Vocabulary in which he added:

> Ta'akimala "insect whose sound presages approaching death, deathwatch"

Collocott translated Tongan poetry extensively and probably ta'akimala is a metaphor for pakiamala, the clock beetle (Elateridae) to which all these entries refer. Deathwatch beetles are furniture beetles of the family Anobiidae. Like click beetles, their bodies are elongate and brown or black, and the size ranges overlap. Some deathwatch species bore into woodwork and produce a ticking sound in their burrows. There is a European superstition that the sound is a portent of death. A click beetle landing on its back bends the head and prothorax backwards, straightening the body suddenly. The straightening produces an audible click and the beetle is propelled into the air. If it does not land right-side-up, it tries again. The Tongan name comprises pakia "strike against" and mala "misfortune"; the clicking is a bad omen.

Pacific long-horned beetles with edible grubs, Villosus spp. (Cerambycidae) were likewise identified through species known in Europe. The entry in Grézel's Dictionnaire Futunien is:

> Vikiviki "stag beetle, or insect of this kind"

Capell"s A New Fijian Dictionary, 1973, has:

> Qou "a large Coleopterus, resembling a stag beetle; it is yavato, as a grub"

Graham Ramsay, in an unpublished paper on Maori names for Orthoptera, has commented that the confusions surrounding Maori names have arisen from European ignorance of the New Zealand fauna. The problem has been not only an attitude of mind which deprives Polynesian societies knowledge of their native fauna until we know it ourselves, but an inclination to match Polynesian with Linnaean categories, for example, Miller when using Maori names (1971:48, 52) allocated naonao to moth midges, namu to sandflies (blackflies), and waeroa to mosquitoes. However, Miller's own researches (1952:27) had earlier recorded that namu is sometimes applied to mosquities, as it is in Niuatoputapu.

With hindsight, Grezel's definition of ugogo was the soundest approach at its time. Now, linguists might elicit definitions of the Polynesian name, and entomologists record all the species called by that name, and combining these two perspectives, arrive at Polynesian classifications.

* * * *

The fauna of Niuatoputapu comprises kakai "people"; manu "land animals"; manupuna "birds and bats"; fingota "reef life": crabs, shellfish, shrimps, sea-eggs, starfish, sea slugs; and ika "free-swimming creatures": fish, eels, octopi, turtles, and sea mammals. I collected fanga ki'i manu kehekehe "various different little animals". The order in which they are presented is a compromise between western sequential taxonomy and Niuatoputapu classes.

kelemutu earthworm

fonu 'uta — "land fonu" slater/wood louse. fonu (1) turtle (2) class of beetles and bugs with hump-backed bodies.

ula 'uta — "land ula" sand hopper (Talitridae)

uloulaavai — "pseudo-shrimp of fresh water". In Niuatoputapu applied to sand hoppers; 'Uvea to mosquito wrigglers. SAMOA ula "shrimp, prawn, crayfish", that is, sand hoppers are classed with other crustaceans.

kaioloola — phosphorescent centipede which glows when touched. (1) thin, greenish, phosphorescent centipedes (? Geophilidae); no specimen collected. (2) immature Scolopendra subspinipes which are small and greenish and also called molokau.

In TOKELAU, taetuli is (1) long, thin, greenish centipede which glows when touched and may leave specks of phosphorescence behind it. (2) young of the molokau centipede, while still in the care of the adult; they are greenish and can be phosphorescent. (3) any phosphorescent glow (Ropati Simona, pers. comm.).

molokau — large, brown centipede, bites. The specimens collected are Scolopendra subspinipes (Scolopendridae), a tramp sp.

'unufe — (1) caterpillar. Some larvae of moths and butterflies are tunga. (2) millipede. Falehau people recognise that millipedes are different from caterpillars in that they do not undergo metamorphosis, they are hard-bodied, live on the ground amongst dry litter and rocks, and do not feed on the green leaves of plants.

'unufe fulufulu — "hairy 'unufe" larva of the blue moon butterfly, Hypolimnas bolina, and other "woolly bear" caterpillers.

'unufe maka — "stone 'unufe" small, black, native millipedes.

'unufe kula — "red 'unufe" a red millipede. Falehau people regard its appearance in Niuatoputapu as recent (toki ha'u).

tunga — grub: larvae of beetles; maggot: larvae of flies; caterpillar: larvae of some moths and butterflies.

manukisi, kisikisi, kisi — dragonfly, damsefly

ane — worker termite
lō puna winged ant, winged termite

Praying mantids are not found in Niuatoputapu. They have been introduced (probably from Fiji) into Tonga, where they are classed with stick insects, mongomongatu'aniu, mokomokotu'aniu; and into Sāmoa where they are classed with stick insects and grasshoppers, sē.

mokōhula — brown earwig spp. found under floormats; eat dry vegetable matter. "Pehē he mokohula ko ia pē 'oku ma'olunga 'i he lalo tapakau". The earwig under the floormat believes he's on top of the pile (Tongan proverb).

kamā — black earwig, Chelisoches morio, found on ripe plantains and bananas where it is predatory on larvae of the banana scab moth.

moholingo — moholingolingo, lingolingo (1) Oceanic field cricket Teleogryllus oceanicus. The moholingo calls singly, at night, with a fine, high chirp. (2) applied to small Delphacid plant hoppers which are classed as he'e.

he'e — (1) grasshoppers. (2) planthoppers (Delphacidae). Small brown Delphacid planthoppers are classed as he'e. They are recognised as not the real he'e, but are so classed because they spurt away, the face is angled down like a grasshopper's, and the hind legs are larger than the fore legs.

he'e mata — "fresh-green grasshopper" long-horned grasshopper spp. (Tettigoniidae), an omen of good luck.

he'e mōmoa — "dry-brown grasshopper" locust, short-horned grasshopper spp. (Acrididae), an omen of bad luck. Abundant in dry weather; can be serious pests.

he'e vai — "water he'e", he'e vao "wild he'e" applied to small grasshoppers, small crickets (Gryllidae), and small brown planthoppers (Delphacidae).

mongomongatu'aniu — "coconut rib creature" and

mōmoatu'aniu — "coconut rib locust" coconut stick insect, Graeffea crouanii.

Polynesian terminology recognises affinities between cockroaches, praying mantids, grasshoppers, and stick insects. In Niuatoputapu, the stick insect is classed both with Blattodea: mongomonga are fast-scuttling beetles and cockroaches, and with Orthoptera: he'e mōmoa are short-horned grasshoppers. In Sāmoa the stick insect is sē'ailauniu, being classed with grasshoppers: sē. In Tongatapu, the stink roach, he'ehe'evao, Platyzosteria nitida (Blattodea), is classed with grasshoppers: he'e. The name he'ehe'evao "wild pseudo-he'e" indicates that stink roaches are regarded as not real he'e. In Tuamotu, stick insects and grasshoppers are classed together as vāvā. Stick insects and praying mantids are classed together in Maori as rō

or whē. Tonga he'e, Maori whē, Sāmoa sē are cognate. In Linnaean classification, Blattodea, Mantodea, and Phasmatodea were subsumed under Orthoptera until general agreement to establish separate orders was reached this century.

kutu — head louse, body louse; animal louse

kutu fisi — "jumping louse" flea

liha — nit

In Tongatapu, kutu includes "plant parasites", for example mealy bugs are kutu hina; in Rarotonga mealy bugs are kutu manga. In their Nukuoro Lexicon of a Polynesian outlier in Micronesia, Carroll and Soulik have defined gudu as "louse (head) or similar ectoparasites of plants or animals, eg, bird lice, scale insects, sap feeding beetles, darkling beetles, etc." However, Cohic 1950 has recorded that in 'Uvea, all scale insects including mealy bugs, greenflies, the Delphacid plant hopper Tarophagus proserpina, and a skin disease of humans are kama.

kālihi — cicada, Baeturia sp. (Cicadidae)

nge'esi kālihi — husk of the cicada nymph

The kālihi call in groups; one starts and the chorus joins in. They may call during the day, in response to rain or the splash of water, and at intervals through the night. The kālihi is called the uasi tonga "Tongan watch" because it calls at the same period of time after sunset each day (Siale Lahi, pers. comm.).

pakia — class of beetles and bugs with elongate bodies, eg, click beetles (Elateridae); longhorn bettles (Cerambycidae); weevils (Curculionidae); Clerada apicicornis (Lygaeidae), a bug found in dirty cupboards and places inhabited by scuttling insects such as cockroaches and silverfish.

Cognate forms suggest that the ideal pakia are click beetles, eg, Tonga pakiamala, Sāmoa tupa'ia "click beetle"; Hawai'i kana pa'ina "click beetle (kane god who sometimes took the form of a click beetle, pā'ina click)" /P&E/. In Niuatoputapu, pakia is used for a wide class of bugs and beetles, comparable with the wide application of mongomonga in Tongatapu. The Tongan Agricultural Officer stationed in Niuatoputapu in 1971 was not sympathetic to the use of pakia, which he believed was derived from the English word "bug".

mongomonga — class of cockroaches and scuttling beetles and bugs, eg, thatch-eating beetle Sessinia livida (Oedemeridae), called manukaipola and classed with mongomonga or pakia; eg, Ceresium unicolor (Cerambycidea), a small longhorn beetle classed with mongomonga or pakia. The bug Riptortus sp. (Alydidae) was classed with manukaipola, ie, with mongomonga or pakia.

mongomonga kulokula "red cockroach" American cockroach, Periplaneta americana, introduced.

mongomonga tea "pale cockroach" white phase of the American cockroach, after moulting during growth stages. Recognised to be the same species and believed to change colour to camouflage itself.

mongomonga (nofo katoleta) "suitcase cockroach" German cockroach, Blatella germanica, and similar spp.

mongomonga ʻuli "black cockroach" native stink roach, Platyzosteria nitida.

mongomonga tonga (specimen not located)

Maori also has a category of small scuttling creatures: pāpapa includes stink roaches, slaters, and tiger beetles [WMS]. Tiger beetles pursuing prey fly short distances and run.

fonu small scuttling creatures with hump-backed or convex bodies, cf. fonu "turtle"; eg, scarab beetles (Scarabaeidae), convex darkling beetles (Tenebrionidae), ladybird beetles (Coccinellidae), slaters/wood lice: fonu ʻuta.

Nukuoro honu uda "small turtle-like insect" /C&S/; Tuamotu honuhonu "water beetle sp." /S&M/; Fiji dadakuvonu "beetle with wings marked like the back of a turtle" /CPL/.

fonu vavae "kapok beetle" ladybird beetle, Coccinella repanda (Coccinellidae). This is the ideal fonu.

manukaipola, pakiakaipola, mongomongakaipola "thatch-eating creature" Sessinia livida (Oedemeridae), a beetle that eats thatch and bites, causing a burning blister; classed with pakia or mongomonga; said to be not a real mongomonga but of the same class.

manu mataka "copra creature" Necrobia rufipes (Cleridae), cosmopolitan sp. Adult beetle is metallic-blue with red legs (3.5 - 7 mm). Grubs are long, thin and purplish, grow to 10 mm long, and bore into mouldy copra.

manukainiu "Coconut-eating creature" Rhinoceros beetle, Oryctes rhinoceros (Scarabaeidae). The grubs are tunga. The beetle originated in South Asia and Malaysia. In 1908-9 it was introduced into Western Sāmoa in parcels of Hevea from Ceylon (Cohic 1950). The beetle arrived in Niuatoputapu in 1924 and was eradicated in 1933 by Michael Muller (Miki Mila) who instituted regular clean-ups, with search parties for the grubs. One side-effect of the clean-up was the practical disappearance of house-flies, which had

previously been a great pest (Pacific Islands Monthly, January 1940, p 33).

Large long-horn beetles with edible larvae: Olethrius villosus (Fiji, Niuafo'ou), Olethrius insularis (Fiji, Sāmoa) (Cerambycidae) are not found in Niuatoputapu.

namu — Nematoceran flies: fragile, long-legged, dull-coloured flies with small heads and crouped stances. (1) mosquito spp. (Culicidae). (2) crane fly spp. (Tipulidae).

ikeikaavai — "little free-swimming creatures in fresh water" mosquito wrigglers; ? aquatic larvae.

fuiva — (1) applied to crane fly spp. (Tipulidae): delicate, long-legged flies classed as namu. (2) applied to small spiders (Pholcidae): delicate long-legged spiders classed as hina. Possibly, fuiva vibrate.

nono — midge, attracted in numbers to lantern light. (1) biting midge spp. (Ceratopogonidae). (2) non-biting midge spp. (Chironomidae).

lango — (1) Brachycera flies: flies with stout abdomens, robust legs and wings, supportive stances, and strong flight. (2) parasitic wasps (Braconidae): strong fliers with slender but robust bodies. (3) water striders (Gerridae). (4) beetles that take readily to flight, eg, introduced leaf beetles (Chrysomelidae). (5) small flying bugs are classed as lango or pakia. (6) small plant hoppers with pretty wings (eg Derbidae) are classed as lango or pepe.

lango tonga — "native fly" house fly (Muscidae)

lango mumuhu — "droning fly" flesh fly (Sarcophagidae)

lango siapani — "Japanese fly" recently introduced; in Tonga it is the "blue bottle" blow fly.

lango meleni — "melon fly" introduced pumpkin beetles, Aulacophora spp. (Chrysomelidae). These leaf beetles have the convex body shape and hard wing covers of fonu, but the head protrudes. Falehau people felt that these introduced beetles do not properly fit either of their categories fonu or lango.

ūngongo — native, solitary, burrowing bees and wasps. The specimens collected are sweat bee (Halictidae); leaf-cutter bee (Megachilidae); mason wasp, Pison sp. (Sphecidae); Odynerus wasp (Eumenidae). The real ungongo bore into dead wood and make a buzzing noise inside. In Sāmoa, native burrow-bees and wasps are classed with lango.

ūngongo sio pou "? bee spying post". Possibly sweat bee (Halictidae); mason wasp (Sphecidae).

pī tonga "native bee" native solitary bees and wasps; modern usage replacing ūngongo, since the introduction of honey bees has created a dichotomy; pī is from English "bee".

pī siapani "Japanese bee" mud wasp, Sceliphron sp. (Sphecidae); introduced.

hone "honey" honey bee, Apis mellifera (Apidae); introduced into Niuatoputapu around 1969-70 by the Agricultural Officer.

hone vao "wild bee" native solitary bees and wasps; modern usage replacing ūngongo since the introduction of honey bees has created this dichotomy.

pulunga "wrapping" nest of the ūngongo, leaf-cutter bee; nest of the pī siapani, mud wasp.

pepe (1) butterfly; brightly-coloured, day-active moths, such as Arctiid moths, Pyralid moths. (2) applied to flying insects with fancy wing patterning, including plant hoppers, beetles, and flies.

Derbidae hoppers with pretty wings are classed as pepe or lango. Introduced pumpkin beetles with black spotted wings, Aulacophora quadrimaculata (Chrysomelidae) are classed as pepe, while plain orange pumpkin beetles are lango meleni. Tephritid flies with patterned wings are classed as pepe or lango.

pepe ano "swamp pepe" applied to crane fly spp. (Tipulidae): delicate, long-legged flies classed as namu. Crane flies are common near water and damp places; are slow, clumsy fliers; some have patterned wings.

fua'ipepe chrysalis

mū moth: drab-coloured, nocturnally active spp., such as Noctuid moths. Falehau people say that if you hold a mū to your ear, you can hear the droning mumuhu sound it makes; this is why it is called mū. In Sāmoa, mū is "burn, glow, redden" which would describe the reddish-brown colouring of nocturnal moths.

mū kula "red moth" fruit-piercing moth, Othreis fullonia (Noctuidae).

mū maama "lantern moth" small Pyralid moths, attracted in numbers to lantern light; classed as pepe by some people.

'elelo "tongue" proboscis

kava "beard" mouth parts, maxillae

'unufe, tunga larvae of moths and butterflies

lō ant

lō puna "flying ant" winged ant, winged termite

lō 'uli "black ant" spp. black ants. The ideal lō 'uli is the black ant commonly found in sugar and cupbards. The small black ant which runs very fast, is inactive at night, and is found eating ripe plantains is just a black ant.

lō kula "red ant" spp. red ants

lō kula ve'e loloa "long-legged red ant" crazy ant, Anoplolepis longipes; recently introduced.

lō'ata large black ant which bites and stings, Odontomachus simillimus (Porinae). Native to the Indo-Pacific region as far east as West Polynesia. Reached Tahiti in the twentieth century; not yet established in Hawai'i.

sikopio "scorpion" scorpion; Falehau people regard scorpions as recently introduced, in bales of second-hand clothing.

hina spider

hina fetukutuku (fetukutuku "make trips back and forth") spiders which fly on their web threads; build webs.

hina kaka (kaka "climb") spiders which climb instead of flying on their web threads; build webs.

hina kaleveleve (kaleveleva is the shining cuckoo, which has a long, straight tail) long-legged spiders

pungāleve spider web

fua, fua 'o e 'uhiki spider egg sack

mama (1) land slug. (2) sea slug. (3) (rarely) land snail

'elili 'uta "land 'elili" land snail spp.: small land snails with turban-shaped shells; also called 'elili vao "bush 'elili". ['elili marine mollusc, turban snail spp. (Turbinidae).]

kele'a 'uta "land kele'a" land snail spp.: small land snails with conch-shaped shells. [kele'a marine mollusc, trumpet triton and other spp. (Muricidae, Cymatidae).]

moko	gecko
moko tea	"pale gecko". The species collected are the Oceanic gecko, Gehyra oceanica, and Lepidodactylus lugubris (Gekkonidae).
pili	skink. The specimen collected is the blue-tailed skink, Emoia cyanura (Scincidae).
pili kāniu	"skink climbing (kaka) coconut palms (niu)". The specimens collected are Emoia murphyi and Lygosoma noctua (Scincidae).
pili 'uli	"black skink" a large lizard, Emoia nigra (Scincidae).
peka	fruit bat, flying fox, Pteropus sp. (Pteropodidae).
pekalū, pekapeka	sheath-tailed bat, Emballonura semicaudata (Emballonuridae), a tiny cave bat found on Tafahi Island. Niuatoputapu: pekapeka rump-tailed swiftlet, Collocalia spodiopygia; Fiji bekaruru moth [CPL].
kumā	rat, the native Polynesian rat, Rattus exulans (Muridae).

* * * *

In the Niuatoputapu classification, there is no isolated grouping of insects of the order Hemiptera. Small brown Delphacid plant hoppers are classed as he'e. Plant hoppers with patterned wings are classed as pepe. Leaf bugs with thin, elongate bodies are classed as lango or pakia. The chinch bug, Paraeucosmetus pacificus (Lygaeidae), a small flying bug with a thin, dark body was classed variously as pakia, lango, and pepe by different people. Shield bugs are not present in the collection, though they have been recorded from Niuafo'ou, Vava'u and Tongatapu. In Tonga, shield bugs are classed with fonu, creatures with hemispherical or convex bodies.

Whereas the categories of lango, pakia and pepe had ambiguous boundaries in common usage, the division between lango and namu, coinciding with the Linnaean division between Brachycera and Nematocera flies, was never confused: namu is a category that excludes.

Nematoceran flies are fragile, long-legged, pale coloured flies with small heads and crouped stances. This sub-order includes: (1) mosquitoes (Culicidae), and crane flies: non-buzzing, non-biting flies (Tipulidae). In Niuatoputapu these are called namu. (2) non-biting midges (Chironomidae), and biting midges (Ceratopogonidae). In Niuatoputapu these are called nono. (3) biting blackflies (Simuliidae). In Maori and Tahiti these are called namu.

In Western taxonomy, the Nematocera are characterised by long antennae, Brachycera by short antennae; and although the

Niuatoputapu division matches the Linnaean classification, the Polynesian names suggest different criteria. Proto Polynesian *lango has been defined "canoe roller, support" /ƁGS/; when a boat is pulled ashore on the slip in Tonga and propped up, this action is lango. To Falehau people, the ideal lango include house flies (Muscidae): lango tonga; flesh flies (Sarcophagidae): lango mumuhu; Platystomatid flies: lango (nofo matala'i 'akau); and hover flies (Syrphidae) : lango. The lango siapani, which in Tonga is the introduced "blue bottle" blow fly, is regarded by Falehau people as a real lango. These are all Brachycera with stout abdomens, robust legs and wings, supportive stances, and strong flight.

Amongst other Brachycera, Tephritid flies with patterned wings are called lango and pepe; Tephritids have a relatively stout and short form. Stilt flies (Dolichopodidae) have long legs like the Nematocera, but the legs are strong and supportive; the abdomen is moderately strong, sometimes metallic, sometimes dull; they are aggressive in pursuit of prey, waiting on foliage with a high-standing stance. The inclusion of Dolichopodid flies in lango is an indication that long-leggedness alone is not a defining feature of namu.

Parasitic wasps have long antennae, long legs, and slender wings; they are nonetheless classed as lango and are strong fliers with slender but robust bodies. Amongst the Brachycera, females of Platystomatids have a flattened ovipositor like the sting of a bee or wasp; Syrphid and Dolichopodid flies are often metallic coloured, like wasps. In Samoa, all bees and wasps are classed as lago. Leaf-cutter bees have large, square heads and cylindrical bodies.

Proto Austronesian *lamuk
"mosquito, crane fly" /ƉWF/
|
Proto Polynesian *lamu,
*namu /ƁGS/
|
Niuatoputapu namu

Proto Austronesian *lagav
"fly, blow fly" /ƉWF/
|
Proto Polynesian *lago
/ƁGS/
|
Niuatoputapu lango

The Austronesian language family comprises about 500 languages occupying Malaysia, Indonesia, the Philippines; parts of Vietnam, Kampuchia, and Taiwan; Madagascar, parts of Irian Jaya and Niugini; Micronesia, Melanesia, and Polynesia. The twentieth century Niuatoputapu categories of namu and lango maintain principles of Austronesian classification whose origins go back to the Neolithic.

ACKNOWLEDGEMENTS

This research has proceeded with the generously given co-operation of the Entomology Division of the DSIR at Mt Albert. Charles Watt sent supplies and corresponded with advice on

collecting procedures, and Peter Maddison examined the collection. Further identifications, correspondence and discussions have been freely contributed by Beverley Holloway, Graeme Ramsay, John Dugdale, Doug Allen, and Tony Whittacker of the DSIR, Joan Robb of the University of Auckland, J P Duffels of the University of Amsterdam, P M Johns of the University of Canterbury, and G Barker of Ruakura Agricultural Research Station.

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NEWS FROM AUSTRALIA

Following the example of the Entomological Society of New Zealand we have recently compiled a list of current postgraduate degree research projects being undertaken in entomology in Australian Universities. This exercise ferreted out the surprising total of 190 projects in 31 different Departments at 14 Universities around Australia. These cover a great range of fields of Entomology, many of which are likely to have trans-Tasman relevance. The main list was published in the May issue (Vol.20,part 2) of the News Bulletin of the Australian Entomological Society with a supplementary list appearing in the August issue (Vol.20, part3). Those interested can obtain copies held in New Zealand by the Secretary, Susan Millar or "Weta" Editor John Tenquist.

The Annual Conference of the Australian Entomological Society attracted 110 delegates when it was staged in Mildura this year. Dr Elizabeth Exley, of the University of Queensland was elected the new President for 1984-85. The venue for the 1985 Conference has been set at the University of Tasmania in Hobart in our Island State of Tasmania. It will be a 5-day affair during the period 26-30 May,1985. As always, papers from the full range of entomology are invited. Visitors are welcome, so New Zealanders who would like to take in the major entomological event should look closely at the convenient direct air service run between Christchurch and Hobart on Saturdays by Trans Australia Airways. The Society is investigating a concession fare on this leg because of the many entomologists who may wish to combine the Hobart Conference with the Grassland Invertebrate Conference at Lincoln College (13-17th May) and/or the insect pathology workshop at the Australian Pathology Society in Auckland (20-24th May). Full details will be included in a brochure to be circulated in November, If you wish to receive this please send your name to: Mr P.McQuillan, Agriculture Department, St.John's Avenue, New Town. Tasmania 7008.

A visitor to Australia in the latter part of 1984 will be Jim Pendergrast, Professor of Biology at Waikato University. Jim arrives in late August after sojourns in the Cook Islands, Samoa and Fiji. In Australia he hopes to spend a little time at the Queensland Museum pursuing his interest in the bug family Aradidae.

Geoff Monteith
AUSTRALIAN CORRESPONDENT

FAUNA OF NEW ZEALAND

OBJECTIVES, AND GUIDELINES FOR CONTRIBUTORS

INTRODUCTION

The idea of publishing a series of volumes on New Zealand's insects, comparable to the 'Faunas' that have long been available for many other countries, was first advanced in the early 1960's when DSIR established a Systematics Section within Entomology Division. The Section has since built up a large collection of well documented specimens from throughout New Zealand and the adjacent Pacific region. Housed at Entomology Division, the New Zealand Arthropod Collection (NZAC) to which this material belongs is the most comprehensive holding of New Zealand arthropod material in the world. This ample resource, open to study by all specialists, is complemented by other institutional collections both in New Zealand and overseas. Most insect groups, and many other invertebrate taxa, are now sufficiently well represented in NZAC and elsewhere to allow the preparation of publications based on the 'Fauna' model.

In the *Fauna of New Zealand* series, each contribution will cover a group of insects or other terrestrial (i.e., non-marine) invertebrates with sufficient explanatory text, keys, and illustrations to make it widely usable. There will also be complementary volumes filling areas of obvious need; for instance, an annotated key to the families of Coleoptera is in preparation. It is this Division's objective to provide authoritative and comprehensive guides to identification, in a medium accessible to all would-be users, and that will evolve as an accumulating descriptive index of our insects, spiders, mites and other terrestrial invertebrates.

(Condensed excerpt from J.F.Longworth's preface to the *Fauna of New Zealand* series, December 1982)

* * *

OBJECTIVES

1. The *Fauna* is to be a series of monographs, published by the DSIR, in which elements of New Zealand's non-marine invertebrate fauna, both native and introduced, are comprehensively described or reviewed.

2. The *Fauna* is intended to provide for identification of New Zealand taxa by means of definitive systematic studies. The needs of the non-specialist reader will be reflected in the content and style of published contributions.

3. Contribution to the *Fauna* is open to biologists who, from close study of taxon or taxa, are able to produce an account of the group's status in New Zealand that conforms to the objectives of the series.

GUIDELINES FOR CONTRIBUTORS

4. No absolute limit is placed on the size of the taxon covered by a *fauna* contribution, whic may be a large genus, a minor phylum, or anything in between. The taxon must, however be treated comprehensively, with sufficient mention of closely related taxa to indicate clearly the nearest adjacent groups.

5. Exceptionally, the 'taxon' covered may be an artifical assemblage which lends itself to treatment as a unit within the series. The various introduced species of a major taxon that have no close indigenous relatives (e.g., the introduced pulmonate gastropods) are a case in point.

6. Item 4 notwithstanding, the format of the *Fauna* (240 x 182mm bound or saddle-stapled in soft covers) imposes an upper limit on the workable size of each numbered unit in the series. Very large contributions may consequently have to be divided; the series editor will recommend on this as necessary. No format deviations will be considered.

7. The *Fauna* concept places strong emphasis on identification to species level, and contributions will generally be a tool to that end. This criterion does not exclude from consideration such treatments as reviews of large but poorly defined groups, or illustrated keys to families. However, checklists, bibliographies and other biological studies unsupported by adequate guidelines to identification will not be accepted into the series. Keys will be used as freely as good character discrimination permits.

8. Intending contributors must first notify their intentions to the chairman of the *Fauna* Advisory Group, who may be contacted at the Entomology Division, DSIR, Mt Albert Research Centre, Private Bag, Auckland. New Zealand.

9. Accepted contributors will be assisted to study the widest possible range of material. Primary type specimens should be lodged in New Zealand.

10. Contributors will be sent detailed guidelines for the preparation of their draft manuscript, according to the nature of their institutional support. Much useful information can be gleaned from a study of published examples of the *Fauna* before drafting is commenced.

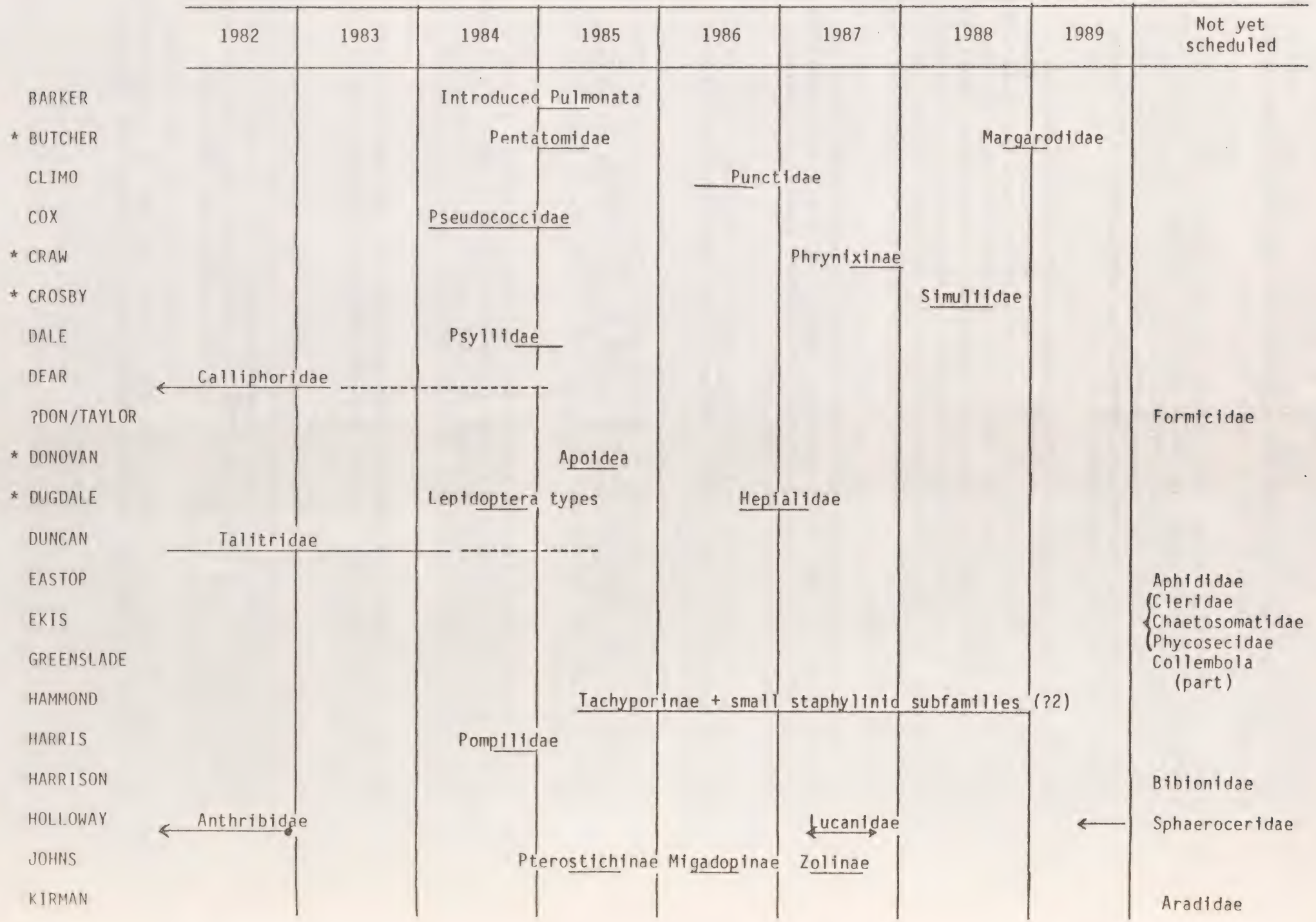
11. Contributors must at the earliest opportunity submit a draft outline of the contents of their contribution, a list of included taxa, and a specimen treatment of one species, for appraisal and comment. Illustrations of that species should be included in the sample.

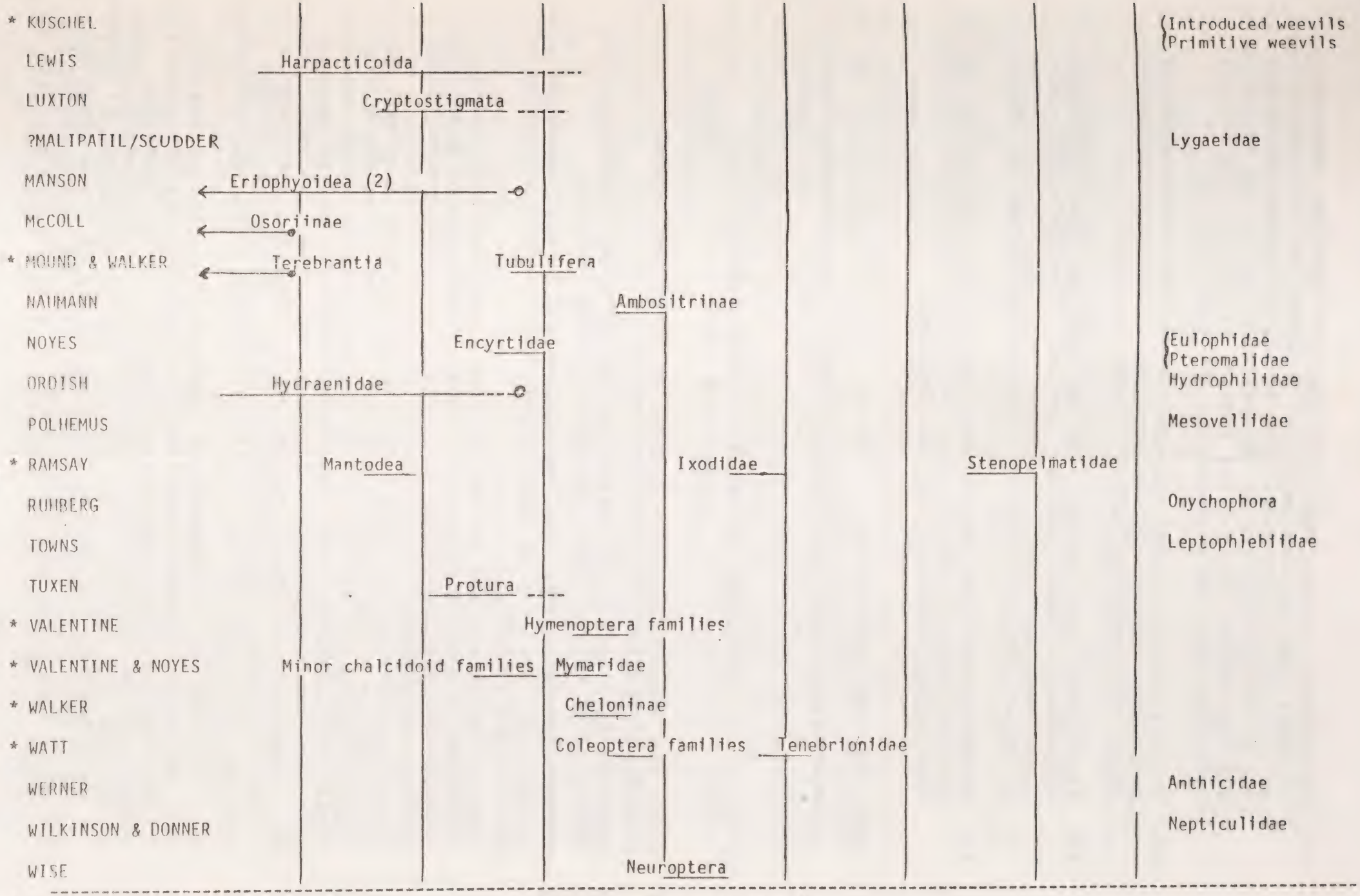
12. Contributors must conform to the articles and recommendations of the International Code of Zoological Nomenclature, in its most recent edition.

13. Contributors are expected to work within the framework established by the *Fauna* Advisory Group for content and style, which allows sufficient lattitude to accommodate the special requirements (and some of the vagaries) of particular taxa. Exceptional circumstances will be referred by the series editor to the Group for consideration.

14. If there is any requirement for the use of colour in illustrations it must be justified to the satisfaction of the series editor.

SUBMISSION/PUBLICATION STATUS OF FAUNA CONTRIBUTIONS





* Entomology Division, DSIR, author or joint author (23 out 60 contributions)

15. Contributors are requested to nominate times for submission of their work and completion of revision, and to update them as work progresses. Failure to do so, or to meet deadlines, may result in rescheduling of the contribution by the series editor and unnecessary delay. The date of receipt of the revised manuscript will be published in the contribution.

16. Contributors are alone responsible for the accuracy of information published. Proofs will be provided to enable contributors to check their material before it goes to press.

17. Contributors must ensure that raw data in which published synopses are based (such as specimen collection data) are stored and identified in a manner ensuring their retrieval by other workers. NZAC will provide facilities for this.

18. Contributions will be processed for publication as quickly as possible after receipt by the series editor of text and figures conforming to mutually agreed standards.

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ENTOMOLOGICAL SOCIETY OF NEW ZEALAND

CONSTITUTION

1 NAME: The name of the Society shall be the Entomological Society of New Zealand (Incorporated).

2 OBJECTS: The objects of the Society shall be the improvement and diffusion of entomological knowledge in New Zealand.

3 MEMBERSHIP: Membership shall be open to all persons interested in entomology. The Society shall consist of honorary and ordinary members and fellows.

Ordinary members: Any person who is approved by the Executive Committee by resolution passed by a two-thirds majority as being suitable for election shall be regarded as a full member of the Society on payment of the Society's fee.
Honorary members: Any member may nominate any other person who has given service of outstanding merit to the Entomological Society of New Zealand for election as an honorary member. Such nomination shall be considered by the Executive Committee, and if approved by a two-thirds majority of such ommittee, shall be submitted for election to a general meeting of the Society, and shall be declared elected on a two-thirds majority of the vote of such meeting. Honorary members shall be entitled to all the privileges of full membership.
Fellows: Any two(2) members may nominate any other person who has made an outstanding contribution to entomology, but especially to New Zealand entomology, as a Fellow of the Entomological Society of New Zealand. Such nomination shall be accompanied by a relevant bibliography and a written statement signed and prepared by the nominators supporting the elegibility of the nominee for election as a Fellow . Such nomination shall be considered by the Executive ommittee, and if approved by a two-thirds majority of

such committee, shall be submitted for election to a general meeting of the Society, and shall be declared elected on a two-thirds majority of the vote of such meeting. The number of Fellows shall be limited at any one time to five(5) living persons and no more than two(2) shall be elected at any one general meeting, provided vacancies exist. Fellows would not be entitled to the privileges of honorary membership. Fellows may, if they so wish, use the letters FESNZ after their name.

4 TERMINATION OF MEMBERSHIP: Membership of the Society may be terminated by (a) resignation in writing, duly accepted by the Executive Committee or (b) by non-payment of fees, or (c) by any cause deemed by the Executive Committee to be detrimental to the well-being of the Society.

5 MEETINGS OF THE SOCIETY: General meetings , shall be called at the discretion of the Executive Committee, and date, place and time of meeting shall be notified to all members of the Society, twenty-eight(28) days prior to the meeting by the Secretary in writing in a newsletter. The Annual meeting shall be called in May of each year, three months' written notice to be given to all members by the Secretary in a newsletter. The Secretary shall call a special meeting through a newsletter, or take a postal ballot of all members, within three months, on the written application of ten(10) financial members of the Society. General meetings (both Annual and Special) shall be presided over by the President or, in his/her absence, the Vice President or in his/her absence any member of the Society designated as chairman by the members present at the meeting. A report of all meetings of the Society shall be circulated to all members by the Society's Secretary. A quorum shall consist of ten(10) members.

6 VOTING: Except for election of officers and alteration of the Constitution, voting at meetings of the Society shall be by show of hands, counted by the Chairman or by a Scrutineer appointed by him, unless a ballot is called for by any member. Members, whether honorary or ordinary, shall have only one vote. Decisions shall be by clear majority of members present and voting, and the Chairman shall have a casting vote.

7 OFFICERS AND THEIR APPOINTMENT AND REMOVAL: Officers of the Society shall be: President, Vice-President, Secretary, Treasurer, Editor, Royal Society Member Bodies Representative and Librarian. The Executive Committee shall comprise the Officers who shall be elected annually and Section Representatives. Nominations in writing for these offices shall be received two calendar months prior to the Annual Meeting by the Secretary. Election shall be by postal ballot of members of the Society and voting papers must be returned to the Secretary before the commencement of the Annual Meeting. The President and the Vice-President shall not hold the same office for more than two successive years. For any cause which shall appear sufficient to a two-thirds majority thereof, members of the Society shall have the power to suspend any member of the Executive Committee of the Society from the exercise of office and declare such position vacant. In the event of any vacancy occurring in the Executive Committee, such Executive Committee shall elect some member to fill the vacancy until the next Annual Meeting of the Society. A quorum of the Executive Committee shall consist of four members.

8 COMMON SEAL: The Common Seal of the Society shall be kept in the custody of the Secretary, who shall by the express authority of the Executive Committee sign every deed to which the seal is affixed.

9 FUNDS OF THE SOCIETY: (a) All funds of the Society shall be paid to the Treasurer, who shall keep proper records of the financial transactions of the Society, and shall pay into such Bank or invest in some suitable form as the Executive Committee may from time to time decide, all moneys that he receives. All accounts for payment shall be passed by the Executive Committee, all cheques or withdrawal warrants shall be signed by two (2) trustees. (b) The Trustees shall be the President, Secretary, Treasurer and one (1) ordinary member of the Society elected at the Annual General Meeting.

10 DISPOSITION OF ASSETS: In the event of the winding up of the Society the distribution of any assets remaining after the payment of all its debts and liabilities shall be decided by the Executive Committee, who shall ensure that the assets shall be distributed to some similar Society established for cultural or educational purposes whose interests are in line with the objects of this Society as indicated in Clause (2) of this Constitution or as a judge of the Supreme Court shall direct.

11 PUBLICATIONS: The Society shall publish regularly a journal containing papers and notes on or related to entomology. The Society may publish occasionally such other publications as the Executive Committee shall consider desirable. The Editor shall be responsiblbe to the Executive Committee for the contents of publication.

12 ALTERATION OF CONSTITUTION: Any part of this Constitution may at any time be repealed or altered, or other clauses added, at any general or special meeting of the Society, provided that any person desiring any such alteration shall give notice in writing to the Secretary of such proposed amendments not less than two (2) calendar months prior to such meeting. Such proposed alteration shall be circulated by the Secretary to all members one (1) calendar month prior to such meeting.

13 SECTIONS: In any area where at least ten (10) members of the Society reside, a Section of the Society may be formed. Such Sections shall be responsible for the conduct of their own affairs in harmony with the Constitution and objects of the Society. Sections shall support financially their own activities, although the Executive Committee of the Society may make grants towards Section activities of general benefit to New Zealand entomology. Sections shall in no way commit the Society to any course of action or expenditure or issue statements in the name of the Society , except with the express permission of the Executive Committee of the Society. Sections may enrol associate members, who shall pay only such subscription as shall be determined by the Section for all its members, and who shall not be liable to pay a subscription to the Society. Such associate members shall have no privileges of membership of the Society, but shall be eligible to become members of the Society if they wish. Each Section shall elect one member of the Society annually to be its representative on the Executive Committee of the Society.

THE WETA 1984 7(4)112-114

---oooOooo---

Not content with being the Immediate Past President of the Ent. Society of NZ, The erudite Allen C.G.Heath is now President of the New Zealand Society for Parasitology! This dicephalous gentleman is also the Member Bodies Representative to the Royal Society (NZSP) and a member of the Management Committee.

Another valued member, Dallas Bishop, also of the Ectoparasitology $$Kiwifruit$$Seed$$counting$$/unit continues as Secretary/Treasurer of that organisation.

CURRENT DEGREE RESEARCH PROJECTS ON ENTOMOLOGICAL TOPICS AT N.Z. UNIVERSITIES : 1984

This list of topics is intended to provide communication between people with similar interests and a source of reference to unpublished theses in University Libraries. Note that Ph.D. and Masters theses are available from University Libraries, but Honours projects are loaned only through the courtesy of the Department or individuals concerned.

UNIVERSITY OF AUCKLAND: Zoology Department

Ph.D.:	Pam Dale	Review of New Zealand Psylloidea (Hemiptera: Homoptera).
	Mark Goodwin	Honey bee (*Apis mellifera*) pollination of Kiwifruit (*Actinidia chinensis*).
	Ann Gunson	Studies towards the development of integrated control of the management of the two-spotted mite *Tetranychus urticae*.
	Alison Hayes	Developing a computer simulation model for the European Red mite (*Panonychus ulmi*) and its predator *Typhlodromus pyri*.
	Derek Russell	Population Dynamics of the Oriental Fruit Moth (*Cydia molesta*) in New Zealand.
M.Sc.:	M.L. Bryham	The effect of some pesticides on *Phytoseiulus persimilis* Athias-Henroit & *Petranychus urticae* Koch (Acarina: Phytoseiidae, Tetranychidae).
	C.D. Millar	Processes and Patterns of Change in mate recognition systems (with *Drosophila*).

UNIVERSITY OF WAIKATO: Department of Biological Sciences

D. Phil.:	Doctorate fellow (Jolly scholarship)	
	I. Boothroyd	Ecology and taxonomy of stream chironomid communities on Mt. Pirongia.
	P. Dentener	Ecology and economic importance of the lucerne flea, *Sminthurus viridis* (Collembola) in the South Auckland/Waikato region. This insect is widespread on white and red clover in pastures.
	P. Gerard	Population biology of the Passion Vine Hopper (*Scolypopa* sp.).
M.Sc.:	J.M. Edwards	Predators of the lucerne flea, *Sminthurus viridis*. The bdellid mite *Bdellodes lapidaria* and other possible predators in the Waikato pastures will be studied.

M.Sc. (cont):

R. Edwards	Biology of *Archicauliodes diversus*.
J. Hewitt	The ecology of benthic algal communities in some Mt. Pirongia streams.
M. Kirman	Studies on Aradidae (Hemiptera: Heteroptera) from leaf litter. A systematic and biogeographical study of these predominantly flightless bugs.
H. Oxenham	Ecology of chironomids in the Waitomo Caves.
P. Summerhays	A study of the distribution of seven species of *Zephlebia* (Ephemeroptera) inhabiting a stream arising on Mt. Pirongia. Life histories and larval habits are examined.

VICTORIA UNIVERSITY: Biochemistry Department

M.Sc.:	Moore, C.	"Aromatic acid conjugation in insects".

VICTORIA UNIVERSITY: Zoology Department

Ph.D.:	Grehan, John	An evolutionary interpretation of *Aenetus virescens* (Lepidoptera: Hepialidae) life history, seasonality, and larval feeding.
	Guzman, Renato	"Factors influencing the effectiveness of some entomophagous nematodes as biological control agents of insect pests".
	Henderson, Ian	"Numerical taxonomy of some New Zealand Trichoptera".
	McIntyre, Mary	"Ecological and behavioural relationships of some native cockroaches (Dictyoptera¶: Blattidae)".
M.Sc.:	Lane, David	"An inquiry into suspected hybridization in zones of overlap involving species of the genus *Kikihia* (Hemoptera: Tibicinidae)".
	MacArthur, Gordon	"Electrophoretic studies on the Porina Moth (*Wiseana* spp.)".
	Bateman, Kevin	"Comparative Biology of Two Social Wasps, *Vespula germanica* and *Vespula vulgaris* (Hymenoptera: Vespidae) in Wellington, New Zealand".
B.Sc.(Hons):	Clark, Colin	Effect of parasitism by *Microplitis* sp. (Hymenoptera: Braconidae) on growth and development of the Magpie Moth *Nyctemera annulata*.

B.Sc.(Hons) (cont.):

Hann, Sean	Competitive interactions between Latrodectus katipo (Powell, 1871) and two Steatoda species Araneae: Theridiidae).
Punnett,Stephen	Aspects of territorial and reproductive behaviour in the New Zealand coastal earwig, Anisolabis littorea.
Ross, Ann	The microdistribution, food and larval retreat of three New Zealand net-spinning caddisfly species (Trichoptera: Hydropsychidae).
Van Rooyen, Jessica	Effect of some environmental conditions on the sex ratio of Microplitis sp. (Hymenoptera: Braconidae) progeny.
Wright, Paul	Studies on a fungal pathogen (Metarhizium anisopliae Metch.) of porina (Wiseana spp.: Hepialidae) larvae.

UNIVERSITY OF CANTERBURY: Zoology Department

Ph.D.:

Hallas, Susan	A comparative study of the ontogeny of web-building jumping spiders (Araneae, Salticidae).
Iris, Francois	Synthesis of collaterial protein during the reproductive cycle in a cockroach Periplaneta americana.
Rowe, Richard	Predatory behaviour in a larval dragonfly, Xanthocnemis zealandica, with special reference to territorial behaviour.
Zervos, Sandra	Nematode gut parasites in New Zealand native cockroaches.

M.Sc. Part 1:

Brassington, R.	New Zealand Dictynidae: web building spiders evolving into hunting spiders.
Collier, K.	Willow leaf decomposition in the Cashmere Stream.
MacNab, A.	The comparative study of visual discrimination in salticids.
Whitehouse, M.	The behaviour and evolution of the kleptoparasitic spider Argyrodes sp.

LINCOLN COLLEGE: Department of Entomology

Ph.D.:	Butcher, M.R.	Ecology of twospotted spider mite populations in Canterbury.
	Frampton, E.R.	The aestivatory and reproductive behaviour of *Sitona discoideus* Gyllenhal (Coleoptera: Curculionidae) and its patterns of infestation of lucerne.
	Hughey, K.F.D.	Breeding and feeding ecology of riverbed birds nesting on rivers in the Canterbury Plains (Much of the food is entomological).
	Leathwick, D.M.	Population dynamics of the brown lacewing in lucerne.
	Pollard, S.D.	The predatory biology of non visual hunting spiders in New Zealand.
	Teulon, D.A.J.	Biology of the New Zealand flower thrips, *Thrips obscuratus*.
	Tomkins, A.R.	Development of a pest management system based on tortricid control in apple orchards in Canterbury, New Zealand.
M. Appl. Sc.:	Fraser, B.R.	Assessment of the effects *Chrysolina herperici* on St John's wort.
	Siddique, M.A.B.	The biology and predation of *Nabis kinbergii* Reuter (Hemiptera: Nabidae).
	Wragg, G.M.	A taxonomic comparison of fluttering and Hutton's shearwaters.

UNIVERSITY OF OTAGO: Zoology Department

Ph.D.:	Bremner, G.	The biology of weevils of the genus *Irenemus* in Otago tussock grasslands.
	Irvine, J.	Effects of peak discharge events on stream organisms, especially invertebrates and under yearling salmonids.
	Ogden, S.	Contribution of honeybees to pollination of legumes in high-country areas under development in Otago.
	Patterson, G.	The ecology and taxonomy of lizards in tussock grasslands of Otago.
	Ryder, G.	The effects of silt on lotic invertebrates.

M.Sc.:	Flanagan, D.	The morphology and response characteristics of deutocerebral neurones in the brain of the honey bee Apis mellifera.
	Kavale, H.	A comparative study of the biology of two Latrodectus species (Araniae: Theridiidas).
B.Sc.(Hons):	Billington, Susan	Comparison of longitudinal distribution of benthic invertebrates in the Kaikorai and Leith Streams.
	Landis, Allison	Structure and function of the antennal lobes in the honeybee Apis mellifera.
	Macmillan, Christine	Olfactory learning in the honeybee.

UNIVERSITY OF OTAGO: Microbiology Department

Ph.D.:	Tenci, S.	The ecology of Coelomomyces opifexi infection against Aedes australis in nature.
	Ward, V.	Characterization of the DNA of porina viruses.
M.Sc.:	Kearns, Leah	Protease activity of Baculoviruses.
Pt. 3:	Thurley, Penelope	Alkaline protease associated with Bacillus thuringiensis serotype 10.

List compiled by Dr G.W. Gibbs, Zoology Department, Victoria University.

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OTAGO BRANCH NOTES

NZ Entomological Society Conference, Dunedin 15-17 May 1984

The organisers of the conference, Rob Archibald, Briam Patrick and I, would like to take this opportunity of formally thanking the following members of the Dunedin Section for their kind and valuable assistance during the conference.

Elma Cook - for organising the food for the poster session evening, with help on the night from Christine Patrick, Charlotte and George Morris and Judy Egerton. Thanks to you all for an excellent spread.

Colin Ferguson - for dashing around when panics were on! and helping with transport, photocopying, etc.

Tony Harris - for designing and reproducing posters and the cover for the conference programme.

Alan Harvey - for organising liquid refreshments for the poster session, supper and for the annual dinner, and to Marie Harvey for her assistance with this task. Alan also organised press and radio coverage of the conference which worked very well.

Peter Maddison- for helping out with registration and selling meal tickets. Thanks Pete - I hope some of us can help out in Auckland next year.

Keith Mitchell - for catching the trout that graced the tables at the annual dinner - they were superb!

Geoff Patterson - for manning the sales table throughout the conference and compiling author abstracts for distribution at the symposium.

Doug Sanderson - for his excellent work in the projection box. Doug made life extremely easy for the speakers with regard to visual aids. One speaker even wanted to use two overhead projectors and a slide projector all at the same time! (I think it might have been our President!)

Ken Stewart - for organising the Invermay tours for delegates.

Thanks to you all - we could not have managed without you!

Barbara Barratt

LETTER TO THE EDITOR

(This letter somehow missed the last issue of the "Weta": My apologies to Bruce Given)

Blenheim

Dear John

I note a minor inaccuracy in Annette Walker's chronology of office bearers. I was not the first Editor of the NZ Entomologist. In 1951, I was still in Australia and Jack Dumbleton produced Vol.1 No.1 as a cyclostyled list, handing over to me in April 1952 when I returned to Nelson.

The foundation of the Society should also be attributed to Dumbleton, who was actively interested as far back as 1938, when he, Jack Kelsey and I discussed the formation of such a Society. Unfortunately, the strong animosity between David Miller and Jack Dumbleton delayed the establishment of a Society for fourteen years.

I wonder if my old membership index still exists? This was a card index which listed all members from 1952 until I handed over to Errol Valentine when he became Editor. On Death, the card was retained but endorsed "Deseased" so no cards were discarded. Resignation and changes of address were similarly recorded. At the time it was the only complete register held by the Society. Alan Lowe's register only retained extant, financial members.

Incidentally, it is interesting to note that in a local club photographic competition which I have been asked to judge, there is a slide of <u>Orthodera</u> consuming <u>Vespula</u>!

Yours sincerely

Bruce Given

AUCKLAND BRANCH HANDOUTS

Over the last few years the Secretary has been accumulating a number of useful leaflets and notes on various aspects of Entomology which can be reproduced according to demand. Any members who have not yet seen these on display at meetings and who would like copies, please order from the Secretary. Prices cover Xeroxing costs only.

The titles on hand are as follows:

Collection Code for NZ Invertebrates	Nature Conservation Council Information Leaflet No.20. Feb.79		
Activities of the Auckland Branch	O.R.Green	17.02.81	6c
Running a Light Trap)* Building a Light Trap)	J.Johansen (Updated)	2.04.81	12c
An Entomologists Kit)* Making your own Mounting Board)	O.R.Green	2.10.81	10c
Beginning Insect Study:			
Part 1 Finding Insects	O.R.Green	22.10.81	6c
2 Collecting Insects			6c
3 Rearing Insects			6c
4 Killing & Relaxing Insects			12c
5 Mounting Insects			6c
6 Identifying Insects			6c
Sweep Net Frames)* How to make a Pooter)	MAF & Others	July 82	12c
Mounting Lepidoptera	R.H.Kleinpaste	17.03.82	6c
Current Popular Books & Leaflets about Insects, especially those of NZ	G.W.Ramsay	April 83	24c
Spelling Checklist of Invertebrate) Orders and Classes)* Classification Family Tree)	O.R.Green	Dec.83	12c

We would also like to draw your attention to leaflets sold very cheaply at the Auckland Institute and War Memorial Museum.....

Collecting Insects	Educational Leaflet No.2	5c
Life Histories of NZ Insects	Educational Leaflet No.3	5c
Common NZ Insects: Wasps	Educational Leaflet No.13	12c

****

Steffan Schellhorn of: 4020 Halle / Saale
Krollwitzer Strabe 33
German Democratic Republic

is an amateur entomologist and wishes to exchange information with a New Zealand Lepidopterist. Please write direct to him at that address.

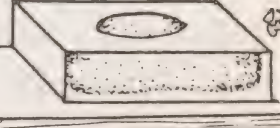
DISPLAY BOX

EXHIBITS AT RECENT AUCKLAND BRANCH MEETINGS

28:03:84 Competition entries of RFBPS: one page illustrated on "A Forgotten Spot" by children 8yrs to 13 yrs for Conservation Week (Nancy Payne). Insects from recent field trip to Omeru reserve including males and queens of the southern ant and adults of the termite Stolotermes ruficeps (Olwyn Green). Live mantids, Miomantis caffra (Beverley Bennett) and D. Helmore drawings of M. caffra and Orthodera ministralis (Graeme Ramsay - speaker).

02:05:84 Cicada with spectacular entomophagous fungus (Gerry Hart). Spider web catches from Little Barrier Is. (Clevland Duval). Computer game on spiders (Trevor Crosby). Spiders and their prey from around home (Chris & O. Green). Live captive spiders (P.H.S. - meeting hosts).

23:05:84 Sand scarab larva from Kuoutunu Beach (Timothy Adams). Butterflies from a home garden in Solomon Islands, including a birdwing and swallowtail (Katherine Fell). Household insect intruders, including a grapevine moth (Nancy Payne). New books: N.Z. Pest and Beneficial Insects, edited by R.R. Scott (C. Green); Common Insects: Book II, Mobil N.Z. nature series, A.K. Walker. Conference photo, 1984 (O. Green). Publications on thrips, microscope slides of N.Z.'s largest and smallest thrips, plants damaged by thrips (Annette Walker - speaker).



Anyone wishing to study the increase in insect activity arising from the non-use of chemicals in a kiwifruit orchard in the Katikati area should contact Mr D Sayers PO Box 6115 / Hamilton.

AUCKLAND BRANCH NOTES

The Auckland Branch of the Ent. Soc. held its second Annual Dinner at Langton's Restaurant recently with 40 members and spouses/girl friends/ boyfriends attending and demonstrating that not only are they good keen entomologists, but that they are also good keen socializers and trenchermen. Langtons Restaurant, situated on the lower slopes of Mt Eden, offers a goodly smorgasbord table which, judging by the skill patrons have in piling high their plates with food, seem to find favour with everyone.

The after dinner talk was given by Ross Galbreath, who spoke on the connections between renowned European entomologists of the past and New Zealand's pioneering collectors. One of the memorable parts of Ross's talk was his quote from Frances Walker's obituary as published in the "Entomologist's Magazine" in 1874. Let all taxonomists beware! It would be generally agreed that eccentricity was a not unknown factor in the make up of entomologists of the past. (Spouses of todays entomologists would aslo agree that eccentricity still seems to be an essential ingredient in the character of the 20th century entomologists).

As is now customary, a special cake was baked and decorated for the occasion. The icing on this year's cake faithfully reproduced the Auckland Branch logo - an entomologist sweeping butterflies on Rangitoto. (That is what he is doing, right?). In view of the absence of photographers from the society pages of our metropolitan newspaper (inexplicably, they failed to arrive), Pat Dale filled this role in his usual suave and unobtrusive manner, capturing for posterity on beautiful Fuji colour film those moments of vivacity and/or reckless abandon that some may, perhaps, later regret. Negatives and sample prints are held by Olwyn Green,

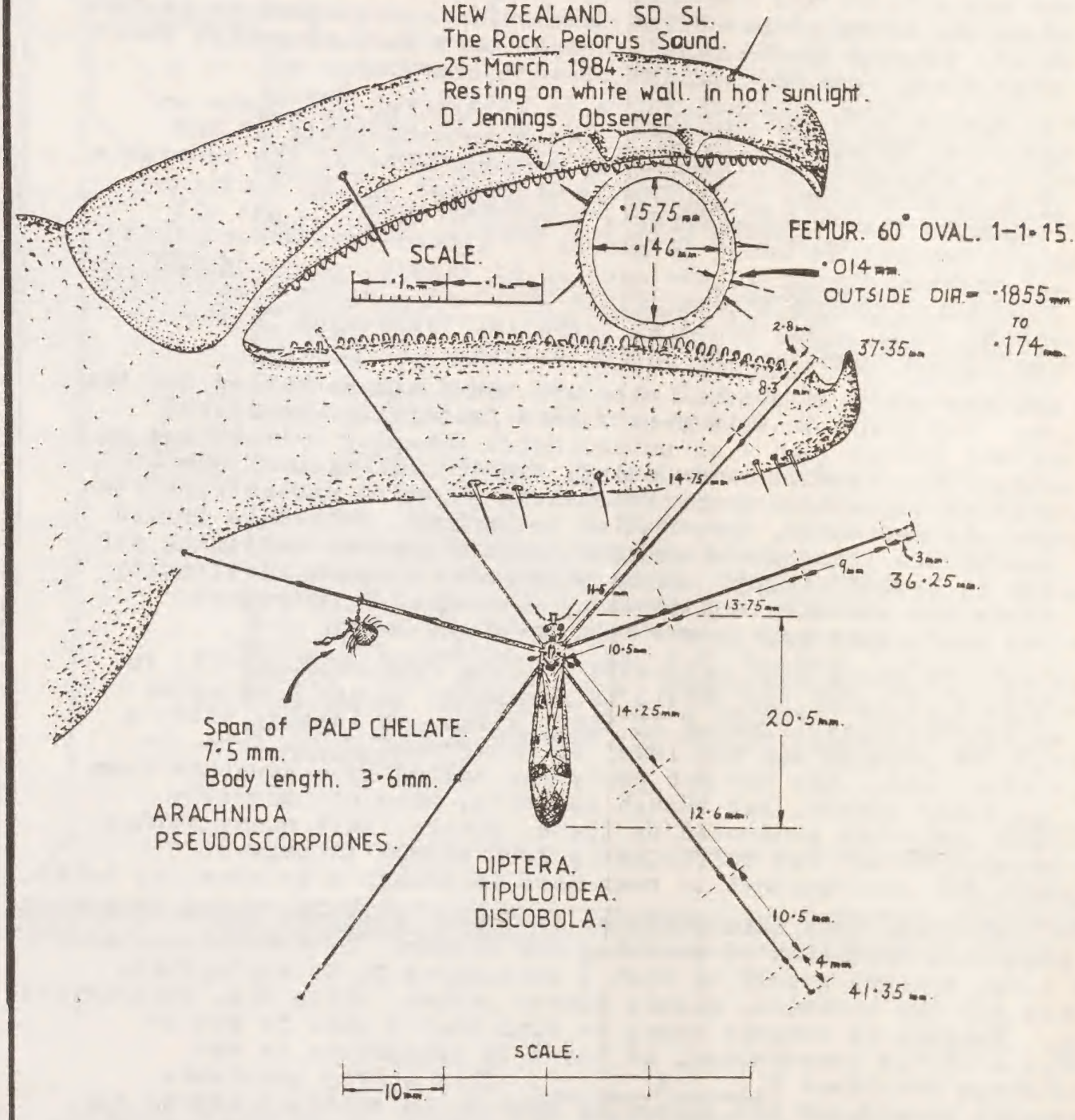
All in all, it was a most enjoyable evening with only one fly in the ointment (I think one should be permitted to use a metaphor with an entomological flavour in this journal at least). (That's OK -Ed.) The problem was the level of background noise from the main dining room. The Ent Soc party was seated in a separate room from the other diners, but though separate, were not entirely apart and the noise generated by these diners (talk noise rather than chewing noise) was sufficiently loud enough to make it difficult for some members to hear Ross Galbreath's interesting talk.

A few final words then this reviewer is done. Whatever happened to the grand old tradition of dressing for dinner? I, traditionalist that I am, dressed myself in what I considered to be appropriate clothes for the occasion, namely dinner jacket, white tie, decorations et al. Imagine my chagrin then, to find that I was, to put it mildly, a little overdressed, at least by comparison to our illustrious President P_____M_____. This worthy gentleman apparently considered his gardening gear to be suitably dressy for the occasion. It is possible, of course, that he had been gardening all day - gardening so industriously and intently that he noticed not, the passing of the hours and simply did not have time to dress for dinner. His lovely and charming wife, on the other hand, was without a doubt, the most elegantly dressed of all the ladies present.

In view of the less than complimentary remarks about our President and also acknowledging his well known propensity for violent action against those who, in his opinion, have given him offense, I deem it advisable to remain anonymous, or partially so at least, and prefer to sign myself as

R_____S_____.

MIGRATION OF PSEUDOSCORPION. ♀



The leg of the Tipuloidea undamaged. Pseudoscorpion could not be removed without injury to either specimen. After much probing with dividers during measuring, they flew off.

DWG-461-84

28 D 1984.

J.D. Tenquist, Editor
ISSN 0111 – 7696

NOTICE TO CONTRIBUTORS

The 'Weta' is a scientific supplement. Editing is kept to a minimum and authors are responsible for the accuracy of their statements. Manuscripts, where possible should be typed double-spaced, on Standard A4 paper, and on one side of the page only.

Authors with access to typing services are requested to supply manuscripts single spaced on A4 paper, using a typeface with ten characters to the inch.

High contrast black and white photos or penned line drawings are acceptable. Closing date for copy is 20th February and 20th August each year. Manuscripts received after those dates may be held over until the following issue.

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